



US006430104B1

(12) **United States Patent**
Rosario

(10) **Patent No.:** **US 6,430,104 B1**
(45) **Date of Patent:** **Aug. 6, 2002**

(54) **SONAR SYSTEM PERFORMANCE METHOD**

5,828,567 A • 10/1998 Eryurek et al. 702/182

(75) **Inventor:** **Michael A. Rosario, Tiverton, RI (US)**

• cited by examiner

(73) **Assignee:** **The United States of America as represented by the Secretary of the Navy, Washington, DC (US)**

Primary Examiner—Daniel T. Pihulic
(74) *Attorney, Agent, or Firm*—Michael J. McGowan;
James M. Kasischke; Prithvi C. Lal

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(57) **ABSTRACT**

A method is disclosed for evaluating and/or selecting sonar systems and sonar sensors is provided that results in a performance rating that represents both the magnitude and consistency of detection of targets positioned at different depths. In a preferred embodiment wherein a sonar system includes at least one source and at least one receiver, the performance rating related to target detection, is plotted for each of a plurality of source and receiver depths. A dynamic range sensitivity factor is selected that provides sensitivity in the performance rating with respect to consistency of the detection range at different depths. The dynamic range sensitivity factor is preferably selected between zero and an inverse of a scaling factor related to a maximum detection range and a minimum detection range for a particular source and receiver depth relationship.

(21) **Appl. No.:** **09/793,784**

(22) **Filed:** **Feb. 27, 2001**

(51) **Int. Cl.⁷** **H04B 17/00; G21C 17/00**

(52) **U.S. Cl.** **367/13**

(58) **Field of Search** **367/13, 131; 702/182**

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,654,835 A	•	3/1987	Feintuch	367/100
4,675,147 A	•	6/1987	Schaefer et al.	702/182
5,541,854 A	•	7/1996	Yundt	702/182
5,734,591 A	•	3/1998	Yundt	702/182

17 Claims, 2 Drawing Sheets

